

INTRODUCTION

- Cefazolin is the recommended first-line antibiotic for surgical prophylaxis due to its effectiveness and safety profile. However, many surgical patients with reported beta-lactam allergies—especially mild reactions such as rash or gastrointestinal upset—are unnecessarily excluded from receiving cefazolin, resulting in the use of alternative antibiotics that may be less effective, leading to increased risk of surgical site infections.

BACKGROUND

- A significant number of patients with beta-lactam allergies received alternative antibiotics (e.g., clindamycin), which may be less effective and contribute to antimicrobial resistance. This practice was often based on incomplete allergy histories or overly cautious interpretation of mild reactions.

PURPOSE

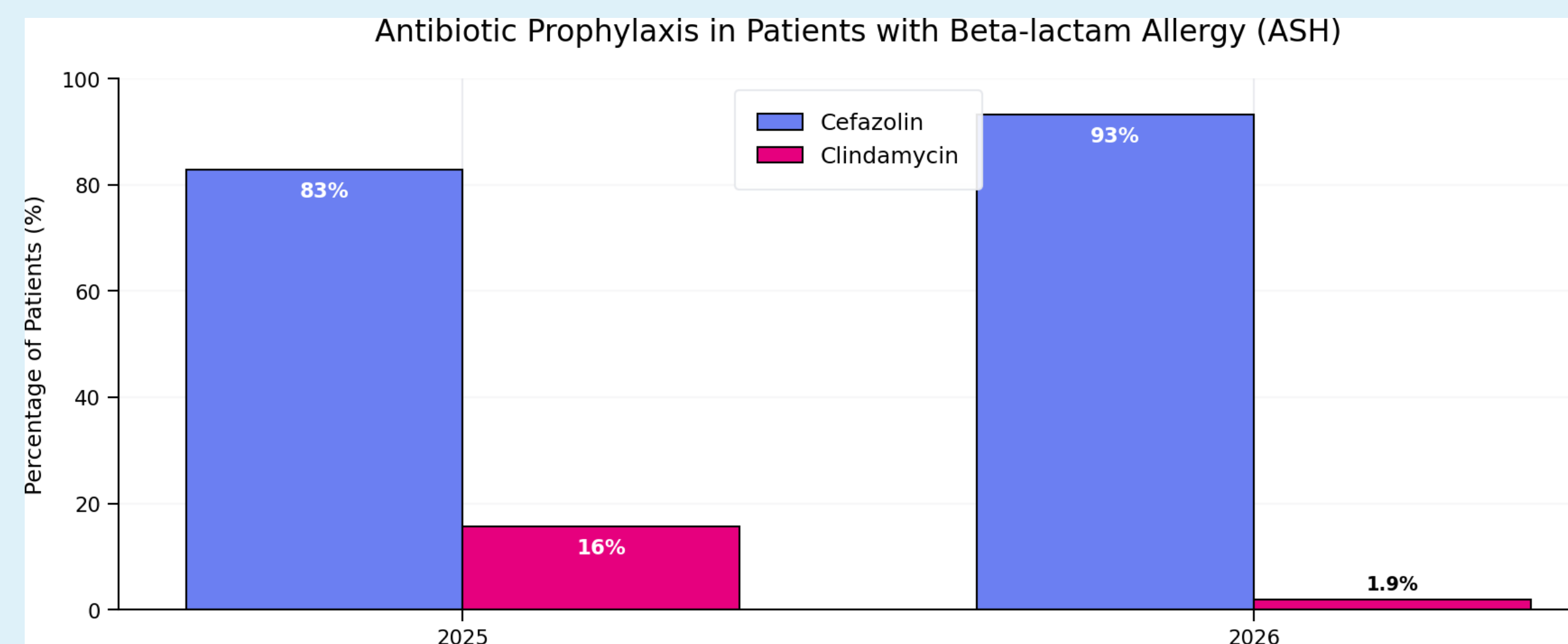
- Can we safely increase the use of cefazolin in surgical patients with reported beta-lactam allergies by improving allergy documentation and provider education?

MATERIALS & METHODS

- A multidisciplinary team reviewed current surgical prophylaxis protocols and allergy documentation practices.
 - Educational sessions were provided to nursing, surgeons, and anesthesia providers on differentiating mild vs. severe beta-lactam allergies.
- Pharmacy and nursing collaborated with an updated allergy algorithm tool that was implemented in the pre-anesthesia call workflows to better classify and flag eligible patients for cefazolin based on revised criteria.
- Marketing developed a tool for patients receiving cefazolin preoperatively.

RESULTS

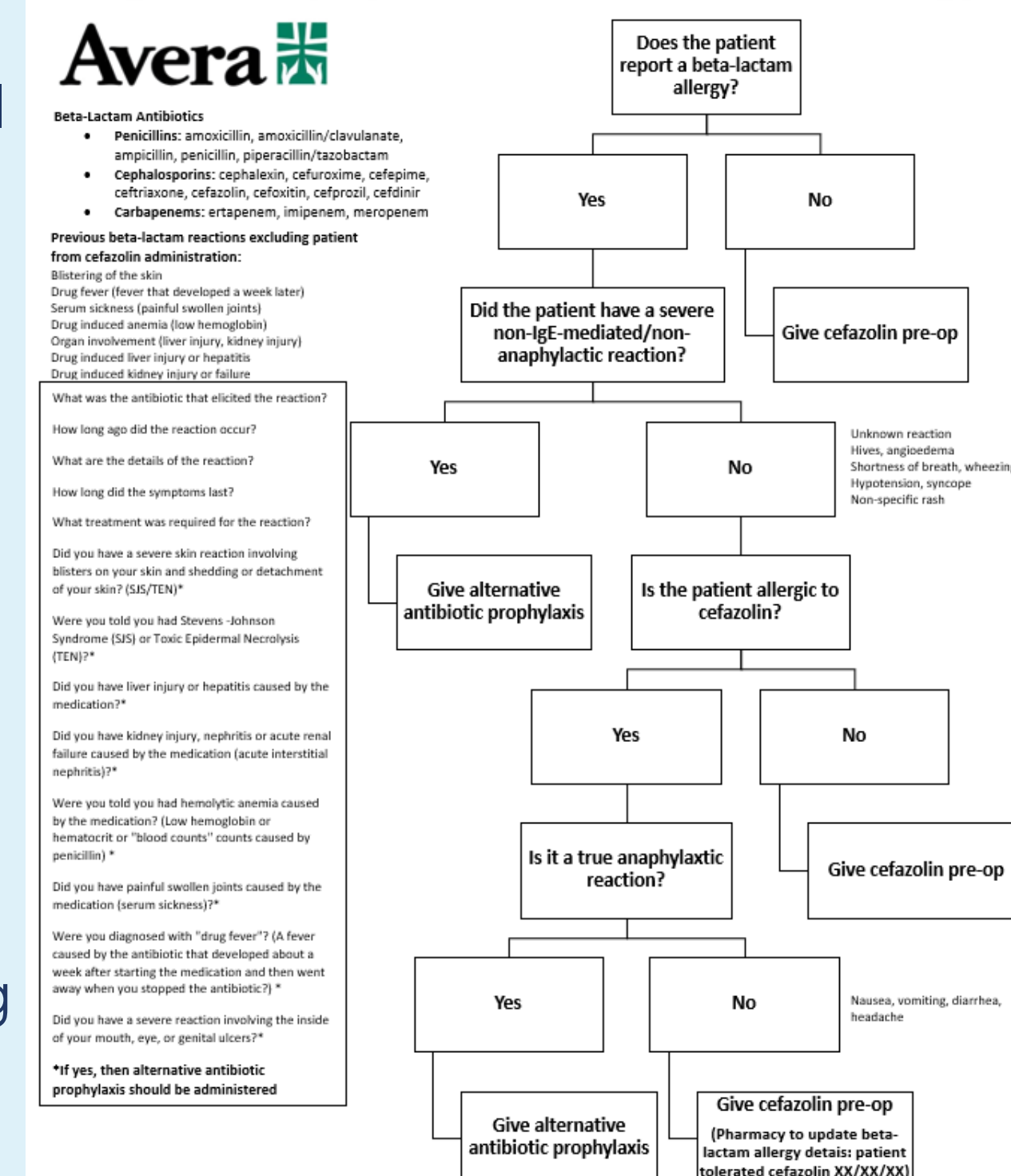
In 2025, 83% of patients received cefazolin, compared to 93% of patients in 2026.
In 2025, 16% of patients received clindamycin, compared to 1.9% in 2026



DISCUSSION

- Results showed a marked increase in cefazolin administration among patients with beta-lactam allergies and a decrease in clindamycin administration.
- Improved documentation and targeted education empowered staff to make safer, evidence-based decisions.
- This project highlights the importance of accurate allergy assessment and interprofessional collaboration in optimizing surgical prophylaxis.

Surgical Prophylaxis & Beta-Lactam Allergy



CONCLUSIONS

- This quality improvement initiative successfully increased the appropriate use of cefazolin among surgical patients with reported beta-lactam allergy while significantly reducing reliance on clindamycin.
- The findings support the effectiveness of structured allergy assessment and reinforce current evidence regarding beta-lactam cross-reactivity. Continued interdisciplinary collaboration is essential to sustain these practice improvements and optimize surgical prophylaxis outcomes.

REFERENCES

Norvell MR, Porter M, Ricco MH, et al. **Cefazolin vs second-line antibiotics for surgical site infection prevention after total joint arthroplasty among patients with a beta-lactam allergy.** *Open Forum Infect Dis.* 2023;10(6):ofad224. doi:10.1093/ofid/ofad224.

Stanford Antimicrobial Safety and Sustainability Program. **SHC surgical antimicrobial prophylaxis guidelines.** Stanford Health Care; revised July 2, 2025.

Clarke ZH, Hogan CA, Dayton MR, Jeffres MN, Koonce RC. **Safety of administering cefazolin in beta-lactam allergic patients undergoing elective orthopaedic procedures.** *J Arthroplasty.* 2025;40(Suppl):S576–S580. doi:10.1016/j.arth.2025.05.057

ACKNOWLEDGEMENTS

Sarah Solma, BSN, RN, AMB-BC
Brandon Bloomgren, PharmD
Timothy Magnuson, PharmD
Sarah Kappel, MHL, BSN, RN, NE-BC, ONC
Jenna Peterson, BSN
Brian Callahan, CRNA
William Lyle, CRNA
Heidi Johnston, RN, MSAS, CPAN, NE-BC